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ABSTRACT

There are two perspectives from which the academic performance of children from high or low socioeconomic backgrounds can be viewed. The non-environmental perspective specifies a direct relationship between performance and innate ability; environmental deficits may be correlated with poor performances but perhaps are not causally related. The environmental perspective considers that environmental factors may raise (or lower) a performance above (or below) the individual's true underlying abililty level; this may lead to the generation of stereotype-reversing hypotheses. In this study of college students, it was predicted and found that individuals who adopt a non-environmental perspective judge the abilities of high and low socioeconomic background children in a manner that confirms their stereotype-based expectations. That is, the high SES child is judged positively and the low SES child, negatively. The reverse of these judgments was found in individuals who adopt an envrionmental perspective in considering children. These results are discussed in terms of the different hypotheses about ability which may be generated by these perspectives and the mechanisms which may lead people to confirm these ability-relevant hypotheses. (Author/GC)

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Emphasizing environmental deficits: An approach to the reversal of self-fulfilling prophecies about minority children

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Abstract

There are two perspectives from which we can view the academic performances of children from high or low socioeconomic (SES) backgrounds. One perspective (a non-environmental set) may focus perceivers on intrinsic differences in ability; the other (an environmental set) emphasizes the environmental determinants of performance differences. The latter environmental factors may include the child's curriculum or opportunities for practice. It was predicted and found that individuals who adopt a non-environmental perspective judge the abilities of high and low SES children in a stereotype-confirming fashion. The high SES child is judged positively and the low SES child less so. The reverse of these judgments, stereotype-disconfirming judgments of ability were found for individuals who adopt an environmental perspective. These results are discussed in terms of the different hypotheses about another's ability which may be generated by these perspectives and the mechanisms which may lead people to confirm these ability-relevant hypotheses.

When a child enters an elementary school classroom at the beginning of a term, information in their school record- grades, reports from former teachers, or standardized test scores, can suggest to teachers what they may see from the child during the year. There are however, other sources of information which may serve as tentative performance indicators. The child's race, social class, family background, or the neighborhood in which the child lives may generate expectancies about the child's level of academic preparation or experience. Most educators are, however, aware that the expectancies a teacher may have about a student may affect that student's academic progress. Rosenthal and Jacobson's (1968) demonstration of self-fulfilling prophecies in the classroom, and the accumulated body of research that has followed, convinces us that teachers' expectancies are often confirmed in a student's performance (Rosenthal, 1974). Students who are expected to show academic progress at the start of a school year are often seen as the best performers at the year's end, and students who are presumed to be "weak", all too often show up at the bottom of the class ranking. The confirmation process seems to occur despite the fact that there may be no initial differences in student capabilities, only differential teacher expectancies. Moreover, the available evidence substantiates our suspicions that self-fulfilling prophecy phenomena have the most profound consequences for minority children (Rist, 1970).

One might suspect that people's increased sensitivity to stereotype biases might preclude self-fulfilling prophecy results in general social interaction, and the more specific "Pygmalion effects" in the classroom. This may not be the case. In a study by Gross and Darley (1981) it was found that biases in the way people process information about others may lead them to stereotypic evaluations despite their concerns about unwarranted discrimination.

In their study, stereotype confirming judgments were found for groups of perceivers who were extremely resistant to applying their stereotype-based beliefs to others. Perceivers were given background information about an elementary school child to induce categorization of the child by social class (high or low) and to establish corresponding expectations for academic achievement (positive or negative). Subsequently, some of these individuals observe the child taking an achievement test. Ability attributions consistent with the child's socioeconomic status (SES) were found for perceivers who witnessed the (identical) performance sequence, but not for those who received only social class information. This pattern of data indicates that perceivers regard their demographic-based expectancies not as truths, but as hypotheses about the child's ability. Importantly, they require that their hypotheses be confirmed or disconfirmed by relevant behavioral evidence, in this case, the child's test performance. When perceivers have only demographic information as a basis for academic evaluations they refrain from making judgments about the child. However, when performance information is provided perceivers test the validity of their hypotheses against the behavioral evidence, but do so in a hypothesis-confirming manner. That is, they preferentially attend to, and use, performance information that is consistent and confirming of their initial expectancies (see also, Snyder & Swann, 1978; Snyder & Cantor, 1979). Thus, perceivers' hypothesis-testing strategies may lead them to the false confirmation of tentatively held hypotheses about high or low SES children.

Our intent in the present paper is not to provide further evidence of self-fulfilling prophecies. On the contrary, we suggest that the picture one receives from reviewing this literature - one that suggests stereotype effects are pervasive, may not be wholly accurate. There are times we will not confirm our stereotypic beliefs. In fact, there may be times we are

led to the reverse conclusion. That is, to stereotype-disconfirming judgments. The present paper is concerned with the question of how these stereotype-reversing judgments may come about.

It is proposed that stereotype-confirming or stereotype-disconfirming judgments may be the product of invoking different evaluative frameworks when interpreting the behavior or performances of stereotyped others. We have labelled these frameworks environmental and non-environmental and will use ability-relevant behaviors performed by different socioeconomic group members to illustrate each.

We can introduce these two frameworks by saying that they evoke variants of a general equation specifying the link between performance and ability. The general form of the equation was dilineated by Heider (1958) who suggested that individuals conceptualize a performance as the result of personal forces - ability and motivation, and environmental forces - task difficulty, luck, practice or prior educational experiences. It is also the case that the contribution of any one of these factors may be seen as more significant than others, such that variants of this general equation are created.

The non-environmental framework we suggest, invokes what may be considered a perceiver's standard performance rule. From this perspective, ability is seen at the most significant performance variable and a direct relation between ability and performance is assumed. Thus, high levels of ability will be reflected in high levels of performing, low levels of ability result in poor performing.

To extend this discussion to encompass stereotyped group members, perceivers' base rate estimates about the poorer performance levels of children from lower socioeconomic backgrounds may be taken as evidence of their poorer capabilities. Thus, it is this perspective which may lead

people to the generation of stereotypic hypotheses about high and low SES children; hypotheses that may be confirmed when observing their actual performances.

In contrast, the environmental perspective describes a more complex statement of the social-class ability link. As the equation given above suggests, ability may not be the only determinant of the level of an individual's performance. One's performance may be affected by environmental factors which may raise (or lower) a performance above (or below) the individual's true underlying ability level. Thus an individual's working performance equation may emphasize the environmental factors affecting performances. For academic performances these non-ability factors may include an individual's educational experiences, the relevance of one's curriculum, or the motivation level of one's teachers. To apply this to stereotypes, people realize that children from low SES backgrounds are likely to be disadvantaged in terms of these environmental variables and high SES children advantaged. If one is now considering the environmental causes of performance levels, base rate data favoring poor or superior performances of high or low SES children are susceptible to a non-ability explanation. A low SES child's poor performance may be due to poor educational experiences; a high SES child's superior performing may be the result of enriched educational experiences. Further, one may need to factor out these performance enhancing or inhibiting variables in order to determine the child's true underlying ability. This factoring out may be done by applying an augmentation rule for children with educational deficits. The rule can be stated as follows: Given the academic obstacles experienced by low SES children, average performing may be indicative of high ability. The discounting rule may be applied for high SES children as follows: Given the academic advantages experienced by these children, evidence of average performing may be indicative of poorer underlying ability.

To summarize, in an environmental perspective people consider the environmental determinants of performances and this consideration may lead to the generation of stereotype-reversing hypotheses. The environmentalist's hypothesis with respect to low SES children may be that the child in question, is indeed, quite capable; conversely, the high SES child may be less so. Given people's tendencies to confirm their hypotheses while observing a relevant performance, these non-stereotypic hypotheses may lead people to stereotype-disconfirming evaluations.

In the present study we sought to provide empirical support for this perceptual frameworks notion. Perceivers were induced to invoke either a non-environmental framework or an environmental framework. In an unrelated context perceivers were asked to evaluate the academic capabilities of an elementary school child. The child is labelled as high or low social class. All perceivers observe the child taking an achievement test and this performance sequence is identical for all groups of perceivers. Ability attributions consistent with SES labels are predicted for individuals who are induced to access a non-environmental framework. However, the reverse of those evaluations - stereotype-disconfirming judgments, are predicted for individuals who are induced to access their environmental perspective.

Procedure

Subjects

Sixty male and female Princeton undergraduates volunteered for a study on "attitude attribution" and were paid $5.00 for one, two-hour session. Participants were randomly assigned to one of four conditions.

Set Manipulations

Non-environmental or environmental sets were primed in the context of an attitude attribution experiment. Participants were asked to read the

opening presentations of two student prepared debates. Their task was to judge the true attitudes of the debator on the selected issue. One of these debates, a debate on "quota systems in hiring" was used to prime (or make salient) either the non-environmental set or the environmental set. Both essays contained information about the educational advantages of some students (e.g., one-to-one contact with teachers, challenging programs) and the educational disadvantages of other students (e.g., over-crowded classrooms, outdated teaching materials). In one essay, non-environmental, these environmental factors were presented as correlated with performance levels and a straightforward link between a performance and one's ability was suggested. It is this set which is predicted to lead to the generation of stereotypic expectancies about the ability levels of high (positive abilities) and low (poorer abilities) SES children. In the environmental essay, the above mentioned educational advantages and disadvantages were suggested to have a direct affect on children's ability levels. Furhter, to partial out the effects of impoverished or enriched bakcgrounds, the augmentation and discounting rules were given. It was suggested that if one factored out the debilitating effects of environment (presumably for low SES children) it may reveal higher underlying ability; if one considered the contribution of enriched environments on performances (presumably for high SES children), performances could reflect somewhat lower ability levels.

Demographic Manipulations

Experiment 1, unexpectedly, concludes an hour early and participants volunteer for a second ostensibly unrelated experiment. In Experiment 2 participants are asked to evaluate the academic capabilities of an elementary school child after observing the child on a videotape. All participants will observe a female, Caucasion child named Hannah who they learn is presently in the fourth grade.

In the negative expectancy condition, Hannah was seen in a lower-middle class, urban neighborhood. The fact sheet given to participants included the following information about Hannah's parents: both parents had only high school educations, her father was employed in a blue collar job and her mother worked at home, part time.

In the positive expectancy condition, Hannah was seen in a middle-class, suburban setting of five and six bedroom homes set upon landscaped grounds. Hannah's fact sheet indicated that both her parents were college graduates and employed in white collar occupations.

After viewing one of the expectancy tapes participants observed Hannah in a test situation. This portion of the tape was identical for all perceivers. Twenty-five achievement problems were given orally to Hannah by a male tester; Hannah responded orally so participants could judge the quality of her performance. The child's performance was prearranged to present an inconsistent picture of her abilities. At times she performs quite well, and at other times poorly. Thus, the information in the tape could lead to inferences of either high or low ability.

Results

Achievement level measures. Participants were asked to place the child at the academic grade representing her ability in three broad areas: Mathematics, Reading, and Liberal Arts. Each of the above curriculum areas was followed by a scale ranging from the kindergarten to the sixth grade, ninth month, which labelled points at every third month.

It was expected that perceivers in the non-environmental conditions would test stereotype-consistent hypotheses about the child. Further, because of perceivers' strategy of testing hypotheses in a confirming manner, both groups of perceivers (high and low SES) are expected to find behavioral evidence consistent with their divergent hypotheses. Grade level placements then, are

expected to fall above the fourth grade level for the high SES child, and below the fourth grade for the low SES child. Hypotheses-confirming bias considerations would predict the reverse of these judgments for perceivers in the environmental set conditions. In this case positive judgements of the low SES child and negative judgments of the high SES child. The joint workings of these two effects would produce a crossover interaction, with ability ratings in the non-environmental set confirming stereotype-based expectancies, and those of the environmental set disconfirming stereotype-based hypotheses.

As shown in Figure 1, the predicted results were obtained.

Insert Figure 1 about here

Analyses of variance confirm the statistical significance of the interaction term for each curriculum index: Liberal Arts, $F(1,36) = 5.26$, $p < .05$; Reading, $F(1,36)=5.99$, $p < .05$; and Mathematics, $F(1,36)=8.69$, $p < .01$.

All groups of perceivers rated the child in a direction consistent with their initial hypotheses. For perceivers in the non-environmental set this is indicated by a marked stereotype confirmation effect. The poor child was indeed seen to perform poorly and the middle-class child was seen to perform quite well. These same hypothesis-confirmation strategies, however, led to the disconfirmation of people's stereotypes about social class and ability in the environmental conditions. When people consider the impact of environment on performances, the same low SES child was seen to be quite capable, she was judged to perform above grade level, while the middle-class child is now seen as having substantially poorer abilities.

We have suggested that the set manipulations led people to generate very different hypotheses about the child's abilities; hypotheses which are tested when people view the child's test-taking performance. Moreover, we have suggested that these hypotheses are tested in a biased fashion, that is, in a confirming fashion, which in turn leads to their ultimate confirmation. Additional data from this study reveals some aspects of this hypothesis-confirming bias.

Information Use. One mechanism which operates in the service of a hypothesis confirming strategy is a selective attention to performance information that is consistent with initial hypotheses. To measure selective attention, perceivers were asked to estimate the number of problems the child answered correctly. The data appear in Table 1.

Insert Table 1 about here

Consistent with the above pattern of data, we find that non-environmental set perceivers estimate the low SES child to have answered fewer problems correctly than the high SES child. The reverse is true of environmental set perceivers. The interaction term is significant for the estimates of the number of easy and moderately difficult problems answered correctly, $F(1,35) = 4.13, 6.81$, respectively, $p < .05$; it is marginally significant for estimates of the number of difficult problems answered correctly, $F(1,35) = 3.80$, $p < .10$.

Reporting Relevant Behaviors. Perceivers were asked in an open-ended question the performance information "most relevant for determining the child's capabilities." We expected that subjects anticipating a good performance would report more instances of positive behaviors than those expecting a poor performance. Confirming predictions, non-environmental

set high SES perceivers report significantly more positive items than low SES perceivers, $p < .05$. Conversely, in the environmental set, low SES perceivers report significantly more positive items, $p < .05$. The ANOVA interaction term is significant for this measure, $F(1,37) = 12.09$, $p < .01$.

To summarize, perceivers disagreed on the number of problems the child answered correctly and how many of her test behaviors reflected either positively or negatively on her achievement level. On every measure non-environmental perceivers made stereotype based judgments, while environmental perceivers showed the reverse of those judgments.

Discussion

We have examined in this paper two different perspectives from which individuals may view the behavior of stereotyped individuals. Moreover, we have suggested that when one of these frameworks is salient it may affect the evaluations made about a categorized other. We have labelled these frameworks environmental and non-environmental distinguishing them by their characteristic emphasis (or de-emphasis) on the environmental determinants of another's performance.

To review, in the non-environmental set individuals regard environmental deficits as correlated with poor performances but perhaps not causally related. The equation in this case specifies a direct relationship between performance and ability such that a poor performance is indicative of poor ability and vice versa. Importantly, it is this perspective which may lead people to interpret base rate information regarding the poor performances of poor children as evidence of poor ability.

The environmental set evokes a more complex statement of the relationship between ability and performance. This is primarily due to a consideration of environment as a determinant of (good or) poor performing.

To get a true conception of ability then, one must partial out from a performance that which is due to enhancing or debilitating environmental factors. This partialling out is done via an augmentation rule for children who have educational deficits and a discounting rule for children with educational advantages. As a consequence of applying these rules expectancies about ability and performance levels become non-stereotypic.

The effect of invoking one of these frameworks may be assessed in the differential judgments made about stereotyped others. On measures of reading, liberal arts, and mathematics ability we find that evaluations under non-environmental conditions confirm stereotyped-based expectancies. The reverse of those judgments, stereotype-disconfirming evaluations were found for environmental set perceivers. Under environmental conditions, perceivers of the low SES child rated the child, on all curriculum measures, as extremely capable. In fact, overall, the child was seen to be performing at the 4th grade, 3rd month level; a substantial, and significant difference from her ratings in the non-environmental set.

The mechanism by which these different evaluations are produced has been described as a hypothesis-testing process and one that is biased toward the eventual confirmation of the hypothesis being tested. There is evidence for a number of mechanisms, operating in the service of a confirmation strategy, that contribute to the present results. First, perceivers who expected the child to do well, (non-environmental high SES, and environmental low SES perceivers) reported the child as having answered more easy and more moderately difficult problems correct than those expecting the child to perform poorly (non-environmental low SES, and environmental high SES). Second, when reporting what evidence they found most useful in determining their evaluations, perceivers in all cases reported expectancy-consistent information.

We would argue that the disparate judgments found here under these different set manipulations could be produced by the same individual depending on the context of judgment. If conditions are such that a non-environmental set is elicited, prejudicial judgments are likely to appear. In other contexts it may be more likely that an environmental set is elicited, and non-stereotypic evaluations would then be likely. What this study tells us then is that stereotypes are not as intractable as we may have suspected; stereotype engagement will not always lead us to stereotype confirmation. This is true, in part, because of some changes in the way we think about our stereotypes, both in terms of why we may hold them and how we should use them.

It is also promising that the present results suggest a viable strategy for reversing stereotype judgments in the evaluative situation. Unlike other procedures for precluding stereotype-confirming judgments, the present priming manipulation does not require limiting the flow of information from the target. For example, other researchers have demonstrated that stereotyping can be decreased if perceivers are given only non-diagnostic or individuating information about the target (Locksley, et al., 1980; Khaneman & Tversky, 1973). While these data are encouraging, their real-world application is perhaps limited. Typically, in social situations information about the target cannot be directly controlled. Moreover, it is probably the case that the harmful effects of stereotype-based judgments occur when perceivers are evaluating diagnostic information. The present data suggest that it may be a more viable strategy to control the perceiver's interpretation of <u>any</u> evidence obtained rather than attempting to limit the evidence they may obtain. Future research should address the question of how these priming manipulations can be introduced into the social contexts in which diagnostic judgments are made.

Until that point however, we can take some comfort in the fact that our strategies for evaluating the behavior of stereotyped others will not, and need not, always lead us to stereotypic conclusions. Unfortunately, there are times when we regard our stereotype-based conceptions of others as "sad but true" statements about the world. We may even consider the possibility that intrinsic differences between people underlie apparent social inequities.

At other times however, our perspectives are quite different. We shift our attention from the possibility of intrinsic differences and focus instead on the social or environmental determinants of these realities. From this perspective we may view a poor child's performance as an indication of substandard educational experiences and will consider the possibility that the child is quite bright. As another example, we may consider the obstacles a woman faces attempting to make it up the corporate ladder and consider that her ability and motivation must be strong indeed. If it is possible to induce perceivers to preferentially access this set, and the present study suggests that it is, it may be quite fortunate that individuals have a tendency to find confirmation for their beliefs in the behaviors of others.

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Figure Caption

Figure 1. Mean grade level placements on the Liberal Arts, Reading, and Mathematics Index for experimental conditions.

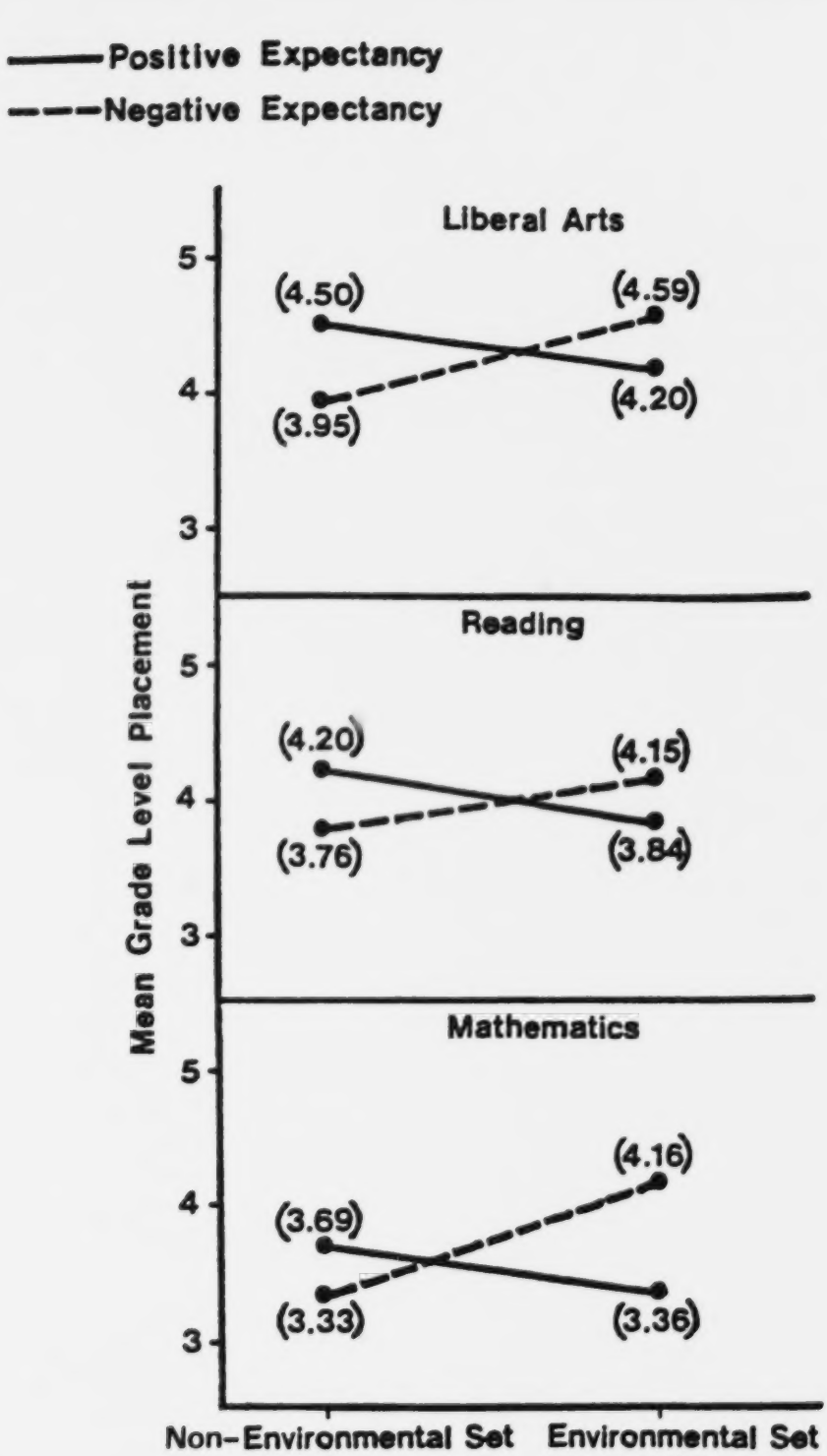
Positive Expectancy
Negative Expectancy
Liberal Arts
(4.50)
(4.59)
(3.95)
(4.20)
Reading
(4.20)
(4.15)
(3.76)
(3.84)
Mathematics
(4.16)
(3.69)
(3.33)
(3.36)
Mean Grade Level Placement
5
4
3
Non-Environmental Set
Environmental Set

Table 1

Estimated Percentage of Problems Answered Correctly

	Non-environmental Set		Environmental Set	
	High SES	Low SES	High SES	Low SES
Easy	92	79	78	87
Moderate	66	54	57	72
Difficult	45	22	33	39